



## DIVER WARFARE IS DISTURBANCE TO SUGAR TRADE

Many Unique Factors Combine To  
Create An Unprecedented  
World Situation

PRICES HOLD FAIRLY FIRM  
IN FACE OF DIFFICULTIES

Refiners' Need of Raws Causes  
Sales That Hold Market  
In Strong Position

The New York sugar market was affected by two main factors during the last two weeks of February, the labor troubles in the refineries and close on the heels of this the announcement of Germany of a return to unrestricted submarine warfare. Other factors entered in the general disturbance of the market and are noted by the Louisiana Planter under date of February 3 as follows:

"The sugar markets of the world have been disturbed during the week by the direct and indirect results of the great war in Europe, the earnest efforts making by the English government to largely reduce the consumption of sugar in England, the very short supplies of sugar available at the Atlantic coast sugar refineries, which latter is increased by the advanced cost of shipping from Cuba, by the withdrawal of the United States beet sugar producers to their own immediate territory, by the very short supply expected from the Philippines and all these influences combining creating a disturbed condition without precedent since the early days of the last century."

Describing the effect of the new submarine warfare on the trade, a special telegram from New York to this journal dated February 1 says:

**Divers Trouble Trade**  
The trade is waiting for developments tonight, and trying to fathom what effect the renewal of the unrestricted submarine warfare by Germany will have on sugar.

"Local circles were inclined to argue heartily from the premises, suggesting for instance that the shipments to the United Kingdom and France would be either prevented or sunk thus forcing the Cuban planter to press his crop in this country."

"Refiners, it was said, would make the most of the opportunity to pick up cheap raws though, on the other hand, they would hardly be happy at suffering a curtailment of the profitable export business."

**Peace To Increase Demand**  
"However, this view was not general, it being suggested that the British would see that their food supplies would be conveyed within minimum losses resulting and where such occurred, a demand for replenishment should follow."

"The American government is not likely to allow its commerce to be interfered with in this fashion, according to the general view, and some think that recent developments mean a material short ending of the war no matter what happens. And peace, in their opinion, will witness an urgent inquiry for sugar from both neutral and belligerent."

"Refiners have been confirmed in their waiting attitude by the strikes at their plants, there being little improvement at the H. and E. or the New York, while the Franklin and Pennsylvania are mentioned as experiencing some trouble as well."

**Strikes Limit Purchases**  
"Labor is restive and until the trouble is settled, purchases will be limited. Receipts are larger than meltings naturally and stocks accumulating. The country is holding off at the 6.75 level."

"The market closed the week of January 27 quiet and dull, depressed by the strikes at the Havemeyer, Arbuckle and Long Island refineries. Last week reported, on Friday of that week, included 8000 bags Porto Rico at 4.75 cents and 4200 bags Cuba at equal to 5.02 duty paid delivered to a speculator and 5000 bags for January shipment at equal to 4.95. Summary of the market for the week of January 29 to February 2 follows:

**Market Is Steady**  
At the opening of the market Monday it was called steady with buyers willing to take more sugars at the last quotations and it was further reported that on Saturday 50,000 bags of Cuba in port and about including some January clearance sugars, were sold at 3 1/2 cents cost and freight.

Some Porto Rico for prompt shipment was sold at 4 1/2 cents and a lot of full duty sugars, due February 1, sold at 4 1/2 cents. These sales left the brokers quoting the market steady at 3 1/2 cents for Cuba, cost and freight, equal to 4.80 cents duty paid.

On Tuesday, January 30, the market was reported quiet and steady, with operators willing to take all February at 3 1/2 cents cost and freight, but with no sales reported. Sugar refiners were reported as showing but little interest because of the increased movement from Cuba and the prospective reduction in meltings because of their own stoppage, the result of the strike. In other words, they were over sold and expecting lower prices, although they

## Sugar Shipments Are Still Far Ahead of Last Year

Sugar shipments from the Islands to San Francisco and the East still continue far ahead of the same time last year. Total shipments through the Sugar Factors Company is reported by Manager Nowell as 71,000 tons including the Lurline, February 13. The total last year including the same sailing of the Lurline on February 15 was 64,000.

Recent cargoes were Matsonia, sailing February 7, 7257 tons for Crockett; Lurline, February 13, 4118 tons for Crockett and 1617 tons for Western; Enterprise, February 10, 3476 tons for Western; Minnesota, 9441 tons for San Francisco for shipment overland from San Francisco to Eastern refineries. Additional shipments which should have been reported in the Hawaiian cargo a week ago were 189 tons from Kona Development Company, 152 tons from Laie, 313 tons from Gay and Robinson, 230 tons from Hutehinson, total of 884 tons.

The next American-Hawaiian steamer due to sail is the Texan which will take out 11,000 tons about the twenty-fourth. The Texan came in from Pearl Harbor yesterday, will load 3041 tons here and sail Friday for Kanaupali and load 3000 tons, sailing for Kahului Sunday, loading 5013 tons there, sailing for Hilo where 3946 tons will be picked up in time for the vessel to depart February 24.

Thereafter the schedule of American-Hawaiian sailings are: Minnesota due here February 24, sailing March 5; Texan, due here March 10, sailing March 19; Mexican, due March 24, sailing April 2; and then a fourteen day sailing service with the Mexican and Texan making the round trip to the Coast every twenty-eight days with "lay-days" in the Islands, loading, the vessels to arrive every other Saturday and depart every other Monday.

Sugar shipments scheduled to go out by Matson steamers are 35,000 tons this month, 24,000 next month and 24,000 tons in April.

## SOIL ACIDS ARE REAL, NOT MERELY APPARENT

The theory that soil acidity is only apparent has been held by some theorists. Their idea was that acidity was often produced in soils not really sour by the rapid fixation or absorption of mineral fertilizers and the splitting up of the chemicals composing them into their mineral and acid constituents. This action, it was supposed, was one of the properties of the soil "gels," or "colloids."

This theory has now been disproved by E. Truog. In the journal of Industrial and Engineering Chemistry, Truog states that "soil acidity is due to true acids and not to selective iron absorption by colloids; the acidity of the active acids in different soils varies greatly, which is of prime importance."

This investigator finds that there are two kinds of soil acidity, which are designated as active and latent. Truog proposes methods for their separate determination.

This subject is of primary interest in connection with the quantities of lime required by agricultural soils.

## Hungary Also Short

London papers quote Baron Kurty, Hungarian food controller, as saying in a recent statement: "Last year's potato crop was bad and will soon be exhausted. Sugar, also, is very short. There is only ten per cent maize in bread. This percentage will be increased during February. Drastic economy and cheerful submission alone will avert famine."

## Pioneer Improvement Plans

Improvements are planned for Pioneer Mill plantation during the present year estimated to cost between \$175,000 and \$200,000, according to the annual report of Manager Weitzheimer. The manager reports that he expects to reduce operating expenses during the present year.

## Eye-Spot In H-333

The eye-spot disease in H-333 was reported to be making rapid headway last month on Kauai and Dr. H. L. Lyon of the planters' experiment station was called to the scene of the trouble to make an investigation. This otherwise excellent variety of cane is extremely susceptible to eye-spot under certain weather conditions and cannot safely be extended to large areas.

had inadequate supplies of sugars with which to proceed.

## Situation Gains Strength

On January 31 the situation was thought to be a little stronger. The strike situation was not improved and was possibly becoming worse. The American Sugar Refining Co. bought 14,000 bags the day before and only then reported, at 3 1/2 cents and it was evident that the refiners as well as the sellers were playing for position.

On Thursday, February 1, some refiners were displaying interest in February shipments at 3 1/2 cents cost and freight but made no purchases and finally speculators bought 20,000 bags of Cuba for February shipment and 20,000 bags for March at 3 1/2 cents cost and freight, equal to 4.89 duty paid delivered.

The waiting game on the part of the refiners failed in that instance and the war news so depressing to the cotton market, did not seem to depress the sugar market.

## OAHU SOON READY FOR LARGER AREA

Improvements To Be Complete  
In Year; Acreage Being  
Gradually Increased

Recording a prosperous year and a good outlook for the future, the annual report of E. K. Bull, manager of Oahu Sugar Company was mailed out to stockholders yesterday for the annual meeting of the company today. The report reads in part as follows:

Justified by accumulated earnings amounting to more than \$1,500,000, partly invested in properties, and partly in the hands of our agents, a stock dividend of \$1,000,000.00 was declared during the past year, increasing the capital stock of the company from \$5,000,000.00 to \$6,000,000.00.

The total net profit for the year was \$1,658,488.17. Dividends paid were: ten per cent on the old capital, and nine per cent on the increased capital, amounting in all to \$1,040,000.00.

We paid the employees of the company a bonus of \$259,611.55.

We have on hand material for containers, more than sufficient for the coming crop, which cost us \$112,778.91.

Our account shows a credit balance of \$806,462.25, in our agents' hands.

## Ready For Any Depression

The general condition of the plantation is excellent, and the labor conditions satisfactory.

By the end of the current year, all the projected improvements should be completed, and the plantation fully developed, and well equipped to handle the increased crops. We should therefore be in a better position than ever before, to meet any depression that may eventually develop in the sugar market.

For the 1917 crop there are to be harvested, the following:

Plant Cane ..... 1,409.54 acres

Long Ratons ..... 3,121.38 "

Short Ratons ..... 605.56 "

\*Total ..... 5,136.48 "

Included in the above area of plant cane are 550 acres of new land in Waialua and Waipio, as well as 112 acres of land previously cultivated without irrigation; these areas being the first new land to come in under the Waialua water system, show a fine stand of cane, although the fields were deprived of irrigation water for a period of several months, while the work of lining some of the tunnels was going on.

## Anomala Pest Parastized

Considerable injury was done to the cane on some of our older fields in Waialua and Waipio, by the Anomala beetle, a pest which has lately infested these sections of the plantation, and a smaller yield of cane per acre than that for 1916 is expected; it is gratifying, in this connection, to report that through the efforts of Mr. F. Maier, entomologist of the Hawaiian Sugar Planters' Association experiment station, an effective parasite for the Anomala beetle has been introduced and liberated in the infested fields in March, 1916. The parasite, a small wasp, "scelion manila," is now well established, and it is to be hoped that the Anomala beetle pest will soon, like the leafhopper, be a thing of the past.

The estimated yield for this crop is 35,000 tons of sugar.

We commenced grinding on the thirtieth of December last, and to date 4,500 tons of sugar have been manufactured and shipped.

The area for the crop of 1918 is as follows:

Plant cane ..... 1509.14 acres

Long Ratons ..... 3767.40 "

Short Ratons (estimated) ..... 800.00 "

Total ..... 6076.54 "

## Next Year 15,000 Tons

It is possible that a small portion of the area for this crop may be required for seed, in this event we intend to offset any reduction by taking in an increased area of short ratons.

Of the area planted, 1374 acres is new land, taken in under the Waialua ditch, in Waipio and Honouliuli. All of this land was planted in good season, and the growing cane presents an excellent and most promising appearance throughout, also the young ratons, particularly in the Honouliuli and Honouliuli sections, are in a very advanced condition, showing a good stand of cane in vigorous growth. Although it is too early to make an estimate of the prospective yield for this crop, we should be safe in assuming that the average yield will equal that of the crop last harvested, at which rate we may look for 45,000 tons of sugar.

## New Land For 1919

An area of about 1500 acres of new land under the Waialua ditch system, has been cleared and, first plowed, for the crop of 1919; in addition to this area, there are some 500 or 600 acres of old lands that will be planted, making a total possible plant for this crop of 1800 or 1900 acres.

Every effort is being made for the coming planting season, in order that all the lands may be planted in good time.

The crop area for 1919, including short ratons, should be approximately the same as that for 1918, or about 6000 acres. With a further additional area of about 200 acres of new land available, we should in the future be able to follow yearly an equal area of old land without reducing the crop area.

## Queensland Calls Local Man To Head Pest Control Work

James F. Illingworth, professor of entomology at the College of Hawaii, has accepted an offer of the government of Queensland, Australia, to take charge of a complete scientific investigation of the cane beetle trouble in the sugar plantations of the Australian state and start the work of building up an experiment station there. Professor Illingworth will complete the current college year and leave for Queensland in May.

The beetle problem has been a big one for the Queensland growers for many years. Queensland entomologists have been investigating the beetle and grub pest, and much material is available, but no effective control of the trouble has as yet been secured.

The Queensland government has offered to subsidize an experiment station for three years, and it is understood that the plan is to make the work permanent.

A proposal to Professor Illingworth has been brought him not yet been decided. Professor Illingworth made a study of conditions in the Fiji Islands some time ago.

## Entomologists Get Good Results In Pest Control Work

Substantial progress in the work of pest control by the staff of the planters' experiment station is reported by H. P. Agee, director. Particularly favorable results are being obtained in the propagation of the Scelion wasp, a parasite of the Anomala beetle.

These natural enemies of the Anomala have become so abundant in field eleven of the Oahu Sugar Company fields. They are established in field March last year that on January 12 the females could be collected as they came to the blossoms of various weeds.

Since that time O. H. Swezey, entomologist conducting the work, has caught large numbers of the wasps and distributed colonies throughout the infested areas.

Some days as many as a hundred of the wasps were caught and in one day a hundred and seventy-five. Altogether in two weeks 891 were collected.

To all appearances, reports Director Agee, they were as abundant at the end of this time as in the beginning; there is every evidence that the parasite is permanently established. Colonies of the Scelion have now been placed in nearly all the Anomala infested fields. They are established in field thirty-nine of Honolulu plantation where the first colony was liberated but they are not yet seen there in abundance.

Work is being continued by the experiment station staff with other parasites of the Anomala, the Tiphan wasp, Prosena flies and Dexia flies. To date there is no evidence of the establishment of these latter parasites.

The breeding of parasites brought from Formosa for the leafhopper pest is also progressing and colonies are sent out from the experiment station whenever available. Last month colonies were liberated where leafhoppers were abundant in Kinross Gulch and field forty-nine of Oahu Sugar Company.

## PHILIPPINE CROP DAMAGED AND ESTIMATE CUT DOWN

Willet & Gray state: "We are in receipt of a cable from Manila which reports a decrease of 50,000 tons in the Philippine crop estimate, from 220,000 tons to 170,000 tons. This amounts to practically a catastrophe, as only about half a crop will be made. Last year's crop amounted to 316,450 tons. The greatest reduction is in the crop of the Island of Iloilo, the largest sugar-producing island of the Philippine group. The damage has been caused principally by very severe rains, which have continued too far also into the grinding season, now on. Continued heavy rains promise to cut down the crop still further."

With all the improvements made during 1915-1916 the mill work did not come up to expectations. Although we ground slightly more cane, with an extraction of about one-half per cent higher than during other years, we expected considerably better results. The rollers were poor and the fiber assembly of our fuel value, which was probably due to the continuous rains.

The Williams shredder which was installed did good work after a good deal of experimenting, and has done very good work so far during the 1917 season.

Everything else seems to work better this year, also the juices are better; but if the rains continue, a falling off of the juices must be expected.

The extraction so far is about one per cent better than last year, and we have also ground more cane per day.

## Evidence Against Topping

Results recorded thus far in a series of topping experiments conducted by the planters' experiment station are against the practice of topping. Direct or Anee reports. The station has five experiments of topping to be harvested this year. Two of these are harvested. The experiments were conducted at the Hilo Sugar Company and show a loss from topping of about nine per cent. "We consider it inadvisable to draw definite conclusions," says Director Agee, "until the results from the other three experiments are available."

## New Field Experiments

Two new field experiments are being laid out by the planters' experiment station staff at Hawaiian Commercial and Sugar Company and at Hilo Mill and Plantation Company. At both places an opportunity is available for accurately designed tests as there is the advantage of laying out experiments before the field is furrowed. In this way straight, accurately measured rows are possible. At Punahoa the area covered by experiments amounts to some sixty acres while at Hilo fifteen acres are devoted to the work.

## PIONEER REPORTS CROP CONDITIONS

Manager States That Grinding  
Progresses Favorably Despite  
Weather

Reports on the 1916 crop, the present crop and the 1918 crop were submitted to the annual meeting of the shareholders of Pioneer Mill Company by Manager Weinheimer as follows:

The area from which the 1916 crop was harvested consisted of 1666.65 acres plantations, 2374.30 acres long ratons and 313.25 acres short ratons, or of a total area of 4354.20 acres. The average yield per acre was 55.30 tons of cane and 7.52 tons of sugar, giving a gain of 3.54 tons of cane per acre and a loss of 0.04 tons of sugar per acre as compared with crop 1915.

It took 0.51 tons more of cane to manufacture one ton of sugar for the 1916 crop than during the previous year.

**Grinding Started Late**  
We started grinding on December 17, 1916, or about one month later than the previous year; this was due to the late arrival of machinery. On account of this late start, and the unfavorable harvesting conditions, the crop was not finished before September 7, 1916, yielding a total output of 32,752 tons of sugar.

Although we ground about 15,000 tons of cane more than in any previous year, the output of sugar was 477 tons less.

To the late grinding is due also a considerable loss of weight of cane. This year's crop suffers.

The 1917 crop had an early start and looked very promising at the beginning of the year 1917; but it suffered from the severe storms during the first four months, and owing to the poor climatic conditions prevailing later on it grew but slowly during the months of June, July and August; only in the months of September and October the cane seemed to improve.

We began grinding this crop on December 4, 1916, and up to January 31, 1917, we have harvested from 984.75 acres 55,706 tons of cane, and have manufactured 7158 tons of sugar. Judging from the foregoing results it seems that my estimate will be realized, which I now place between 32,000 and 33,000 tons of sugar.

**Cane Producing Well**  
So far, it took 7.60 tons of cane to manufacture one ton of sugar, or 330 tons less than up to the same date during the previous year. In spite of the weather conditions, which have not been favorable for harvesting, we have not lost much time of grinding.

The 1918 crop consists of 890.50 acres of cane, 3334.30 acres long ratons, and about 400 acres short ratons, or of a total of about 4600 acres. On account of the late grinding during 1916 this crop had a poor start and I was unable to plant as large an area as I had anticipated. We only finished planting by the end of November, and the ratons were also late. The cane of quite a large area has not covered in, and the continuous rains will cause us a considerably higher expense for weeding.

**Next Crop Is Behind**  
The crop as a whole is behind, in comparison with other years, and at the present time, even considering the larger area, it looks as if we could not expect as good yield as in other years, which is due mainly to the larger area of short ratons.

With all the improvements made during 1915-1916 the mill work did not come up to expectations. Although we ground slightly more cane, with an extraction of about one-half per cent higher than during other years, we expected considerably better results. The rollers were poor and the fiber assembly of our fuel value, which was probably due to the continuous rains.

The Williams shredder which was installed did good work after a good deal of experimenting, and has done very good work so far during the 1917 season.

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## SOME PLOW POINTERS

In plowing, the center of resistance is at the bottom of the furrow and not at the end of the plow beam. Using multiple shares, from two to a dozen, the main draft must be rigidly attached to the plow-beams so that the plow, once having been set to turn a furrow to the proper depth, will keep that position and follow team or tractor wherever they lead.

Keep the plowshares sharp. See that all wheel bearings and roller coulters are well greased daily. A sharp plowshare does better work with less power than a dull one. Use the center wheel freely during the plowing season.

## Danish Sugar Shortage

In connection with the introduction of sugar tickets in Denmark, the Danish home minister has issued a statement according to which all sugar stocks of more than 5,000 kilograms (over 11,000 pounds) will be seized by the government.

## Refined Soars As Market Responds To Cuban Situation

With the New York market hanging on the outcome of the revolt in Cuba, prices received yesterday indicate a rapid rise in the price for raws. Refined has already advanced, soaring twenty-five cents during the last few days. Two wireless messages received by Alexander & Baldwin from the New York house of the firm summarize trading up till yesterday, as follows:

"The market is unsettled, due to possible revolution in Cuba. Refiners and trade are minimizing the importance of the probable trouble."

"The option market, due to the covering of shorts, closed for February delivery at 5.45 cents, for March delivery at 5.40 cents, and for May delivery at 5.40 cents. A possible reaction may take place, depending on Cuban conditions."

"There are no offers of raws. Operators are bidding 5.27 cents, while refiners have withdrawn. The refined basis advanced to 7.00 cents."

"The second message, sent a day later, follows:

"Refiners advanced the basis to 7.25 cents. There was a good business before the advance. Operators purchased early March Cubas at 5.30 cents. Porto Ricoes sold to Warner at 5.05 cents for March shipment sold at 5.30 cents. Refiners were buyers of February and early March at 5.32. May option opened at 5.40, closed at 5.45. The future market depends on developments of the Cuban situation."

"The refined basis has been steady at 6.75 cents for several weeks. Records of A. M. Nowell, manager of the Sugar Factors' Company, show that New York refined advanced to 7.00 cents Tuesday, with the exception of the American and the Howell refineries, which quoted 6.75 cents. Yesterday the American advanced to 7.00 and all others to 7.25 cents, with the exception of Howell, which withdrew from the market."

Yesterday morning Crockett and Western refineries in the San Francisco market advanced to 7.00 cents, making New York and San Francisco on a par, assuming the American quotation of 7.00 in New York holds."

**SEEDLING PROPAGATION  
WORK SHOWS PROGRESS**

Propagation of new seedling varieties has met with excellent success at the various sub-stations of the planters' experiment station according to Director Agee who reports the inauguration of a new plan of work in experimenting for the improvement of cane varieties. Germinations of new seedlings to date are reported by L. D. Larsen, agriculturalist, to the number of 24,800.

The number of seedlings are reported as follows: 4000 at Honolulu were J. S. B. Pratt, Jr., and Y. K. Kamaal in charge of the work; 500 at Waipio in charge of L. T. Lyman; 15,000 at Wailuku in charge of J. T. Moir, Jr.; 2000 at McBryde in charge of R. S. Thurston; 3000 at Kohala in charge of W. P. Alexander; 225 at Honokaa and 75 at Hilo.

"The plan of conducting this seedling work on the various plantations seems entirely successful," said Director Agee. "We are receiving splendid cooperation from the plantations. In addition to the work reported, five plantations are starting propagation work on their own accord."

The new plan of conducting the work on improvement of cane varieties will be under way within the next few months. It is devised by Dr. H. L. Lyon, station pathologist, and is explained as follows by Director Agee:

"Our work in securing better varieties has thus far been largely confined to the propagation of a large number of new seedlings, and the selection of a few which give promise of exceeding the standard cane."

"The question of improving a single variety, say Yellow Caledonia, by taking advantage of the vegetative or bud variation among the individual plants or sections, by selection, strains superior to the average run of the variety has been discussed from time to time. The proposition is subject to many errors from uncontrollable factors, and the big problem is to surmount these."

"We propose within the next few months to investigate the possibilities in this direction utilizing a plan which has been devised by Dr. Lyon after certain preliminary work."

"In brief, the idea is to go into a field just ahead of the harvesting gangs, and test hundreds, perhaps thousands, of canes by cutting a small section from each stick, squeezing out a few drops of juice and determining the density by means of a refractometer."

"Dr. Lyon proposes that after once establishing the average of a field, those canes showing unusually high density will be noted and seed cane cuttings obtained from them. Thus an effort will be made to divide the Yellow Caledonia or any other variety under examination, into strains that vary from the average in sucrose content."

**RUSSIA NEEDS IMPORTS TO  
MAKE UP FOR POOR CROP**

The Russian crop for 1916-17 is turning out very poorly, reports Willet & Gray, as was anticipated. "It is questioned," states this journal, "whether an amount in addition to the 300,000 tons to be imported free will not have to be allowed to help out the existing severe shortage."

"Hongkong reports indicate that the bulk of the 200,000 tons to be imported into Russia through Vladivostok is being supplied by Japan, whose Formosan crop is large, the mills there having started grinding a month earlier than usual."

"So far America has participated in supplying Russia with sugar only to the extent of the recently reported export of about 25,000 tons, but even that is in doubt, the actual destination not being fully confirmed yet."

## REFINERY STRIKES DEPRESS MARKET

Improvement Comes Later On  
Heavy Sales of Cubas  
and Porto Rico

Reports of a dull market in New York for raw sugar, with a slight improvement later, is told of in the correspondence of a local sugar house from its New York representative writing under date of January